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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,853	10/15/2003	Michael A. McLeod	API-1008US	8457

25264 7590 02/23/2005

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EXAMINER	
CHOI, LING SIU	
ART UNIT	**PAPER NUMBER**
1713	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/685,853	MCLEOD ET AL.	
	Examiner	Art Unit	
	Ling-Siu Choi	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 02/17/2004.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-7 and 8-16, drawn to a polyethylene film and a process to prepare the polyethylene film, classified in class 525, subclass 387.

   II. Claims 17-23, drawn to a modified polyethylene polymer, classified in class 526, subclass 352.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as a molding material and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the

inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. Gene L. Tyler on January 5, 2005, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-16. Affirmation of this election must be made by applicant in replying to this Office action. Claims 17-23 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

6. **The following is a quotation of the second paragraph of 35 U.S.C. 112:**

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, lines 6-8; claim 8, line 5-7, the recitation " a film of the modified polyethylene polymetr as compared to a similar film of the unmodified polyethylene polymer" causes indefiniteness. Is the comparison made at the same experimental conditions?

Claim Rejections - 35 USC § 102

8. **The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:**

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. Claims 1-2, 4-9, and 11-16 are rejected under 35 U.S.C. 102(a) as being anticipated by Rowland et al. (US 6,114,486).

A polyethylene film formed from a modified polyethylene, wherein the modified polyethylene is prepared by treating

polyethylene	MI 2.16 = about 0.10 to about 7.0 and Mw/Mn = about 3 to about 7
to increase long chain branching by an amount sufficient to decrease the rate at which water vapor passes through a film of the modified polyethylene as compared to a similar film of the unmodified polyethylene	

(summary of claim 1)

Rowland et al. disclose that a modified ethylene polymer is obtained by treating an ethylene polymer with an organic peroxide to increase the molecular weight distribution and/or the melt flow ratio, but less than the amount causing more than 0.5 wt% gel formation, wherein the ethylene polymer has melt index at least about 0.1 gm/10 minutes; the molecular weight distribution (Mw/Mn) of about 2; and I_{10} / I_2 ratio at least about 5.63 and is obtained in the presence of a Ziegler Natta catalyst (col. 7, lines 35-37; col. 10, lines 3-17; col. 13, lines 10-29; col. 21, lines 12-25; Table 1). Attention is drawn to Tables 1 and 6, wherein the data is presented as follows,

Example	*2*	*2A*	*2B*	*2C*	*2D*
I_{10} / I_2	7.39	7.79	9.15	11.77	12.96
density	0.8731	0.8732	0.8729	0.8730	0.8731

A conclusion can then be drawn that the extrusion of ethylene polymer with peroxide

does not substantially change the density but I_{10} / I_2 ratio. According to the disclosure of Rowland et al. "the I_{10} / I_2 ratio indicates the degree of long chain branching, i.e., the higher the I_{10} / I_2 ratio, the more long chain branching in the polymer" (col. 10, lines 3-11). Thus, the pore size would become smaller after the extrusion in the presence of hydrogen peroxide due to the higher degree of long chain branching at the substantially unchanged density, which leads to low water vapor. thus, the present claims are anticipated by the disclosure of Rowland et al.

Claim Rejections - 35 USC § 103

10. **The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

> **(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.**

11. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rowland et al. (US 6,114,486).

The disclosure of Rowland et al. is adequalely disclosed in paragraph 9 and is incorporated herein by reference.

The difference between the present claim and the disclosure of Rowland et al. is the requirement of an extrusion in the presence of air to increase long chain branching of ethylene polymer.

Neubauer discloses a process to extrude polyethylene in the presence of a mixture of an inert gas and oxygen, which reads on air (abstract). Neuauer further disclose that the excess amount of the organic peroxide or oxygen can cause chain scission and additional equipment is needed to safely handle the organic peroxide (col. 2, lines 19-37). In light of such benefit, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use air in the disclosure of Rowland et al. and thereby obtain the present invention.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.

LING-SUI CHOI
PRIMARY EXAMINER

February 18, 2005